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| 10/589,497 | 08/15/2006 | Isao Miyagawa | 0033-1091PUS1 | 9861 |
| 2292 7590 07/22/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | | |
| EXAMINER JANSSEN, SHANNON L. | | | | |
| ART UNIT 4131 | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/589,497

Applicant(s)

MIYAGAWA ET AL.

Examiner

SHANNON JANSSEN

Art Unit

4131

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on June 29, 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date August 15, 2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-5 are currently pending. Claims 4-5 have been withdrawn and claims 1-3 are currently under consideration.

Election/Restrictions

Applicant's election without traverse of Group I (claims 1-3) in the reply filed on June 29, 2009 is acknowledged.

Claims 4-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 29, 2009.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on March 3, 2004. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

The information disclosure statement (IDS) submitted on August 15, 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Present claims 1-3 are method claims without distinct positive method steps. It is unclear what method steps are required by the claim, beyond hybridization by hybridizing. Method steps such as determining vapor pressure and immobilizing the probe onto a glass slide are procedural steps which appear to be indicated in the method but are not set forth with sufficient particularity.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Clontech (GlassHyb ® Hybridization solution user manual, published January 9, 2001).

Present claim 1 is drawn to a method of hybridizing a sample biopolymer on a glass slide and a probe biopolymer in a closed vessel containing a solution having the same vapor pressure as the solution containing the sample biopolymer.

For present **claim 1** Clontech teaches a hybridization method comprising inserting a glass microarray into a hybridization chamber and adding a hybridization

solution containing the labeled probe (ie: sample biopolymer in solution, thereby having the same vapor pressure) and closing the chamber (p 3).

Therefore claim 1 is anticipated by Clontech.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Schembri (US Patent Application Publication 2001/0046702, filed June 19, 2001).

Present claim 1 is drawn to a method of hybridizing a sample biopolymer on a glass slide and a probe biopolymer in a closed vessel containing a solution having the same vapor pressure as the solution containing the sample biopolymer.

For present **claim 1** Schembri teaches a hybridization chamber for hybridizing at least one array (specification [0040]), wherein the array can be a glass microscope slide (specification [0041] and that the chamber forms a vapor tight seal (specification [0055]). Schembri further teaches a method of hybridizing sample (ie: probe) to an array comprising inserting the array into the chamber, adding the sample to be hybridized (ie: same vapor pressure because only hybridization buffer is added) and closing the chamber (specification [0084-0089]).

Therefore claim 1 is anticipated by Schembri.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clontech GlassHyb® Hybridization solution user manual, published January 9, 2001) and Sato et al (US Patent Application Publication 2002/0127589, published September 12, 2002, provided by applicants in IDS).

Present claim 1 is drawn to a method of hybridizing a sample biopolymer on a glass slide and a probe biopolymer in a closed vessel containing a solution having the same vapor pressure as the solution containing the sample biopolymer. Present claims 2-3 are drawn to the hybridization method of claim 1 wherein the slide glass comprises a hydrophilic region to which probe biopolymers are fixed and a hydrophobic region to which no probe biopolymer is immobilized formed around the arranged plurality of hydrophilic regions

For present **claim 1** Clontech teaches a hybridization method comprising inserting a glass microarray into a hybridization chamber and adding a hybridization solution containing the labeled probe (ie: sample biopolymer in solution, thereby having the same vapor pressure) and closing the chamber (p 3).

Clontech does not teach a slide glass comprising hydrophilic and hydrophobic regions.

For present **claims 2-3** Sato et al. teaches a hybridization microarray comprising a hydrophilic region to which probe biopolymers are fixed and a hydrophobic region to

which no probe biopolymer is immobilized formed around the arranged plurality of hydrophilic regions (Abstract, [0011, 0021-0023]).

It would have been obvious to one of ordinary skill in the art to modify Clontech with Sato et al. One would have been motivated to do so because Clontech teaches that the hybridization chamber used in their method ensures uniform hybridization (p 3, para 1). Further, Sato et al. teach the advantage of using an array with hydrophilic and hydrophobic regions as being advantageous because it is "capable of shaping a spot of probe DNA to be fixed, into the desired shape readily and easily" (specification, [0010-0011]). One would have had a reasonable expectation for success because Clontech teaches using glass slides with the hybridization chamber (p 3, para 1).

Therefore it would have been *prima facie* obvious to modify Clontech or Schembri with Sato et al.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schembri (US Patent Application Publication 2001/0046702, filed June 19, 2001) and Sato et al (US Patent Application Publication 2002/0127589, published September 12, 2002, provided by applicants in IDS).

Present claim 1 is drawn to a method of hybridizing a sample biopolymer on a glass slide and a probe biopolymer in a closed vessel containing a solution having the same vapor pressure as the solution containing the sample biopolymer. Present claims

2-3 are drawn to the hybridization method of claim 1 wherein the slide glass comprises a hydrophilic region to which probe biopolymers are fixed and a hydrophobic region to which no probe biopolymer is immobilized formed around the arranged plurality of hydrophilic regions.

For present **claim 1** Schembri teaches a hybridization chamber for hybridizing at least one array (specification [0040]), wherein the array can be a glass microscope slide (specification [0041] and that the chamber forms a vapor tight seal (specification [0055]). Schembri further teaches a method of hybridizing sample (ie: probe) to an array comprising inserting the array into the chamber, adding the sample to be hybridized (ie: same vapor pressure because only hybridization buffer is added) and closing the chamber (specification [0084-0089]). Schembri also teaches that the use of an evaporation inhibiting liquid may create an uneven distribution and cause evaporation of portions of the array (specification [0008]).

Schembri does not teach a slide glass comprising hydrophilic and hydrophobic regions.

For present **claims 2-3** Sato et al. teaches a hybridization microarray comprising a hydrophilic region to which probe biopolymers are fixed and a hydrophobic region to which no probe biopolymer is immobilized formed around the arranged plurality of hydrophilic regions (Abstract, [0011, 0021-0023]).

It would have been obvious to one of ordinary skill in the art to modify Schembri with Sato et al. One would have been motivated to do so because Schembri teaches

that the hybridization chamber provides for the even distribution of a sample over an array surface and substantially prevents dehydration of the array surface during the hybridization process (specification [0009]). Further, Sato et al. teach the advantage of using an array with hydrophilic and hydrophobic regions as being advantageous because it is "capable of shaping a spot of probe DNA to be fixed, into the desired shape readily and easily" (specification, [0010-0011]). One would have had a reasonable expectation for success because Schembri teaches that the array chamber disclosed in their application can be used with a multitude of different array formats (specification [0009] and that the array can be a glass microscope slide (specification [0041]).

Therefore it would have been *prima facie* obvious to modify Schembri with Sato et al.

Future Communications

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANNON JANSSEN whose telephone number is (571)270-1303. The examiner can normally be reached on Monday through Friday 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson can be reached on (571)272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHANNON JANSSEN/
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